

### REMARKS

By entry of this Amendment, claims 1-36 and 38-45 are pending. Claims 1, 16, 19 and 27 are amended, and claim 37 is cancelled, leaving claims 2-15, 17, 18, 20-26, 28-36 and 38-45 unchanged. Claims 22-26 were previously withdrawn. Claims 16 and 19 are hereby amended to address clerical errors in originally-filed claims 16 and 19.

### CLAIM REJECTIONS UNDER 35 U.S.C. §103

On page 2 of the Office Action, claims 1-21 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,648,943, issued to Malashenko et al. ("Malashenko").

#### Independent claim 1

Claim 1 is hereby amended, and calls for:

A vibrational device for use with a papermaking machine having a wire, the vibrational device comprising:  
at least one vibration-inducing mechanism;  
a vibrational head coupled to the at least one vibration-inducing mechanism and movable to impart a vibrational force to the wire, the vibrational head having a support and a vibrational element coupled to the support and positionable adjacent the wire, the vibrational element having a surface substantially facing the wire and across which the wire passes during operation of the papermaking machine; and  
at least one dampener coupled between the vibration-inducing mechanism and the vibrational element.

As described in greater detail in the present application as originally filed, some embodiments of the present invention provide a vibrational device for use with a papermaking machine having a wire, wherein the vibrational device comprises at least one vibration-inducing mechanism, a vibrational head coupled to the at least one vibration-inducing mechanism and having a support and a vibrational element with a surface substantially facing the passing wire, and at least one dampener coupled between the at least one vibration-inducing mechanism and the vibrational element.

In contrast, and as discussed with the Examiner in the July 19, 2005 Examiner's Interview with the undersigned Applicant's Representative, Malashenko teaches a vibrating mechanism 15 having a shoe 12 mounted on a platform 39, and movable toward and away from forming wires 14 and 16 in a papermaking machine by vibration of a vibrator 46 to which the platform 39 is coupled. As also discussed with the Examiner in the July 19, 2005 Examiner's Interview, the platform 39 is pivoted about a pivot 30 by vibration of the vibrator 46, and is affected by nothing that could be considered a dampener coupled anywhere between the vibrator 46 and the shoe 12.

Described in greater detail, Malashenko teaches a forming section 10 of a papermaking machine that includes a first forming shoe 12 atop which two forming wires 14 and 16 converge (see FIG. 1). The shoe 12 is mounted on a vibrating mechanism 15. As also shown in FIG. 1, the shoe 12 is mounted on a platform 39, which is itself mounted on a pivot 30. A vibrator 46 is coupled to the platform 39, and causes the platform 39 and the shoe 12 coupled to the platform 39 to pivot about the pivot 30 upwardly and downwardly toward and away from the wires 14 and 16. An air bag 36 is positioned between an underlying support member 28 and the platform 39 to bias the platform 39 away from the underlying support member 28. A second air bag 38 is positioned between the underlying support member 28 and a plate 40 suspended from the platform 39 and adjustable to change the system's spring constant. However, Malashenko fails to teach, describe or suggest a dampener coupled anywhere between the vibrator 46 and the shoe 12 as claimed in amended claim 1. Instead, and as discussed with the Examiner in the July 19, 2005 Examiner's Interview, the only structures taught by Malashenko that in any way resemble dampeners are the air bags 36 and 38, which are not coupled between the vibrator 46 and an element transmitting a vibrational force to the wires 14 and 16 (namely, the shoe 12).

As a result, Malashenko fails to teach, describe or suggest, among other things, "at least one vibration-inducing mechanism; a vibrational head coupled to the at least one vibration-inducing mechanism and movable to impart a vibrational force to the wire, the vibrational head having a support and a vibrational element coupled to the support and positionable adjacent the wire, the vibrational element having a surface substantially facing the wire and across which the wire passes during operation of the papermaking machine; and at least one dampener coupled

between the vibration-inducing mechanism and the vibrational element” as claimed in amended claim 1. Malashenko fails to teach or suggest any dampener coupled between the shoe 12 and the vibrator 46, nor why a dampener in such a position would be necessary or desirable. Malashenko also fails to teach or suggest how or why the disclosed vibrating mechanism 15 could be modified to include a dampener in such a position.

Accordingly, and for other reasons not discussed herein, the Applicant respectfully requests withdrawal of the 35 U.S.C. §103(a) rejections of claim 1.

#### Dependent claims 2-21

Claims 2-21 are each ultimately dependent upon amended claim 1, and are therefore allowable based upon amended claim 1 and upon other features and elements claimed in claims 2-21 but not discussed herein. Accordingly, the Applicant respectfully requests withdrawal of the 35 U.S.C. §103(a) rejections of claims 2-21.

On pages 2 and 3 of the Office Action, claims 27, 31 and 37-39 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 1,841,702, issued to Berry (“Berry”).

#### Independent claim 27

Claim 27 is hereby amended, and calls for:

A vibrational device for use with a papermaking machine having a wire, the vibrational device comprising:

- first and second vibration-inducing mechanisms; and
- a vibrational head including a vibrational element and first and second supports, the first and second supports coupled to and driven by the first and second vibration-inducing mechanisms, respectively, the vibrational element coupled to and driven by the first and second vibration-inducing mechanisms via the first and second supports to transmit vibrational force to the wire,
- the first vibration-inducing mechanism controllable independently of the second vibration-inducing mechanism.

As described in greater detail in the present application as originally filed, some embodiments of the present invention provide a vibrational device for a papermaking machine,

wherein the vibrational device comprises a vibrational head including a vibrational element and first and second supports, and a first vibration-inducing mechanism controllable independently of a second vibration-inducing mechanism, wherein the first and second vibration-inducing mechanisms are coupled to the vibrational element via the first and second supports, respectively, to drive the vibrational element to transmit vibrational force to the wire of the papermaking machine.

In contrast, and as discussed with the Examiner in the July 19, 2005 Examiner's Interview, Berry teaches a wire vibrator for vibrating the forming wire of a Fourdrinier paper machine, wherein multiple electrical vibrators 15 are operated together without independent control in order to vibrate a transverse board 11 in contact with the forming wire 12 of a papermaking machine.

Described in greater detail, Berry teaches a vibrating device 10 positioned to impart vibration to a forming wire 12 (see FIG. 1). The vibrating device 10 includes a board 11 extending transversely of the forming wire 12, wherein the board 11 is formed of hard wood and presents a narrow edge for contact with the underside of the forming wire 12. One or more electrical vibrators 15 (see also FIG. 2) are attached to the board 11. As shown in FIGS. 3 and 4, each electrical vibrator 15 includes a casing 16 that is secured by an angle piece 17 and screws 18 to the underside of the board 11. Inside the casing 16 is a soft iron member 37 with a core 38 and a coil 19 positioned around the core 38. A block 20 and screw 21 secure a metallic spring member 22 in the casing 16. The spring member 22 is secured at one end by the head of the screw 21 against base points 23 of the block 20, and extends over and adjacent the core 38. At its free end, the spring member 22 carries a weight or hammer 24 that projects through an opening 25 in the upper wall of the casing 16 for contact with the underside edge of the board 11.

The coil 19 is connected by wires 26 to an alternating current generator 27, which in turn is powered by a variable speed direct current motor 28 (see FIG. 1). The speed of the motor 28 can be controlled by a rheostat 30, which can vary the speed of the motor 28, and consequently, the frequency or cycle of the alternating current generator 27. As the cycle of the alternating current generator 27 is varied, the frequency of the vibratory impulse imparted to the board 11 by the hammer 24 is varied.

As shown in FIGS. 1 and 2, Berry teaches multiple electrical vibrators 15 coupled to a single board 11, each electrical vibrator 15 having a hammer 24 to impart a vibration to the board 11. However, as discussed with the Examiner in the July 19, 2005 Examiner's Interview, Berry fails to teach, describe, or suggest control of any of the electrical vibrators 15 independently of the other electrical vibrators 15. Instead, as shown in FIG. 1 and described on page 1, line 87 to page 2, line 20, Berry teaches the control of three electrical vibrators 15 with the same generator 27, motor 28 and rheostat 30, wherein all three electrical vibrators 15 are powered with the same electrical components, and therefore under the same conditions. Berry fails to teach or suggest control of any of the three electrical vibrators 15 independently of the other electrical vibrators 15, nor why such control would be necessary or desirable.

As a result, Berry fails to teach, describe or suggest "first and second vibration-inducing mechanisms; and a vibrational head including a vibrational element and first and second supports, the first and second supports coupled to and driven by the first and second vibration-inducing mechanisms, respectively, the vibrational element coupled to and driven by the first and second vibration-inducing mechanisms via the first and second supports to transmit vibrational force to the wire, the first vibration-inducing mechanism controllable independently of the second vibration-inducing mechanism," as claimed in amended claim 27, nor why such a configuration or independent control of vibration-inducing mechanisms would be necessary or desirable.

Accordingly, and for other reasons not discussed herein, the Applicant respectfully requests withdrawal of the 35 U.S.C. §103(a) rejections of claim 27.


Dependent claims 28-36 and 38-45

Claims 28-36 and 38-45 are each ultimately dependent upon amended claim 27, and are allowable based upon amended claim 27 and upon other features and elements claimed in claims 28-36 and 38-45 but not discussed herein. Also, claim 37 is hereby canceled without prejudice. Therefore, the Applicant respectfully requests withdrawal of the 35 U.S.C. §103(a) rejections of claims 28-36 and 38-45.

On pages 3 and 4 of the Office Action, claims 1-21 and 27-45 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-28 of U.S. Patent No. 6,702,925, and are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 and 19-26 of co-pending U.S. Patent Application No. 10/770,142. However, during the July 19, 2005 Examiner's Interview with the undersigned Applicant's Representative, the Examiner acknowledged that the identification of elements by the previous Examiner of this application (Examiner Peter Chin) appeared to be incorrect – or at least subject to re-interpretation by the Examiner. In particular, in the correspondence of elements presented by the former Examiner of the present application, the vibrator 46 of the Malashenko device was compared to the vibrational element of claim 1 (i.e., that element adjacent the wire and across which the wire passes during operation of the papermaking machine as claimed in amended claim 1). This correspondence of elements suggests a structure that is entirely different from that being claimed. Claim 1 is hereby amended to clarify what is referred to as the "vibrational element". In light of the Examiner's Interview and the amendments hereby made to claim 1, the Applicant respectfully requests reconsideration of the double patenting rejections of claims 1-21 and 27-45.

Early, favorable consideration of the application is respectfully requested. The Examiner is invited to contact the undersigned if he believes it would be helpful.

Respectfully submitted,

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